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10/776,365	02/11/2004	Yoshikatsu Itoh	188-96	3208

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EXAMINER
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MARTIN, LAURA E

ART UNIT	PAPER NUMBER
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2853

MAIL DATE	DELIVERY MODE
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05/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/776,365

Applicant(s)

ITOH ET AL.

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 13 -15 are objected to because of the following informalities: "if orange color" should be changed to "if an orange color" and "if purple is" should be changed to "if a purple color". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "if" suggests that the step in the method is not necessary to be performed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 6, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilgenfeld et al. (US 6391388) in view of Tomioka et al. (US 20020062762).

**Hilgenfeld et al. discloses the following claim limitations:**

As per claim 4: an image reproduced using at least five color of inorganic pigments provided as colorants which are magenta ink of gold purple and red ink of cadmium red as red components, as well as yellow ink of cadmium yellow and cyan ink of cobalt aluminum chrome blue, and black ink (column 5, lines 6-10) on a base material, and thereafter performing baking (column 4, lines 45-65).

As per claim 6: an ink jet printing method which comprises printing on a base material, using an ink set comprising four inks of inorganic pigments provided as colorants which are magenta ink of gold purple as red component, red ink of cadmium red as a red component, yellow ink and cyan to form an image on a base material (column 5, lines 6-10), and thereafter performing baking (column 4, lines 45-65)

As per claim 3: an ink jet printing method wherein said yellow ink is cadmium yellow ink and said cyan ink is cobalt aluminum chrome blue ink (column 5, lines 6-10).

As per claim 9: a printed matter obtained by the method of claim 6 (column 6, lines 10-11).

As per claim 11: separately ejecting onto the base material each of the five ink colors of the inorganic pigments as colors selected from magenta ink of gold purple and red ink of cadmium red as red components, yellow ink of cadmium ink, cyan ink of cobalt aluminium chrome blue, and black ink, to form an image on the base material (column 5, lines 6-10) and thereafter performing baking (column 4, lines 45-65).

As per claim 12: the four ink colors taught in claim 6 (column 5, lines 6-10) ejected onto a base media.

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**Hilgenfeld et al. does not disclose the following claim limitations:**

As per claim 4: an ink jet printer and five colored inks each provided separately to print an image.

As per claim 6: an ink jet printer and four colored inks each provided separately to print an image.

As per claim 11: separately ejecting onto the base material each of the five ink colors.

As per claim 12: ejecting four color inks separately.

**Tomioka et al. discloses the following claim limitations:**

As per claim 4: an ink jet printer [0002] and five colored inks each provided separately to print an image (figure 12, elements 1201Y, 1201M, 1201C, and 1201L) and (claim 16 – any of the listed inks can be selected to form an ink set).

As per claim 6: an ink jet printer [0002] and four colored inks each provided separately to print an image (figure 12, elements 1201Y, 1201M, 1201C, and 1201L) and (claim 16 – any of the listed inks can be selected to form an ink set).

As per claim 11: separately ejecting onto the base material each of the five ink colors (figure 12, elements 1201Y, 1201M, 1201C, and 1201L) and (claim 16 – any of the listed inks can be selected to form an ink set).

As per claim 12: ejecting four color inks separately (figure 12, elements 1201Y, 1201M, 1201C, and 1201L) and (claim 16 – any of the listed inks can be selected to form an ink set).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the methods taught by Hilgenfeld et al. with the disclosure of Tomioki et al. in order to provide a higher quality printed image.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hilgenfeld et al. (US 6391388) and Tomioka et al. (US 20020062762), and further view of Minami (US 6741386).

**Hilgenfeld et al. disclose the following claim limitations:**

As per claim 5: a black ink (column 2, line 61).

**Hilgenfeld et al. as modified does not disclose the following claim limitations:**

As per claim 5: a cobalt ferrite black ink.

**Minami discloses the following claim limitations:**

As per claim 5: a cobalt ferrite black ink (column 9, lines 1-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Hilgenfeld et al. as modified with the disclosure of Minami in order to create a higher quality baked color.

Claim 7, 8, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilgenfeld et al. (US 6391388) and Tomioka et al. (US 20020062762), and further view of Oishi et al. (JP 2001081363).

**Hilgenfeld et al. discloses:**

As per claim 7: the base material is an inorganic material (column 4, lines 45-65)) and the ink receptor layer is formed using glass frit on a surface of the basematerial (column 3, lines 44-55).

**Hilgenfeld et al. as modified does not disclose:**

As per claim 7: using glass frit on a surface of the base material prior to inkjet recording.

As per claim 8: after printing and image formation on the base material using an ink jet, all of the inorganic pigments are baked simultaneously to the base material by a single baking operation.

As per claim 10: after the printing and image formation on the base material using an ink jet, all of the inorganic pigments are baked simultaneously by as single baking operation.

**Oishi et al. discloses:**

As per claim 7: using glass frit on a surface of the base material prior to inkjet recording [0008].

As per claim 8: after printing and image formation on the base material using an ink jet, all of the inorganic pigments are baked simultaneously to the base material by a single baking operation [0025-0026].

As per claim 10: after printing and image formation on the base material using an ink jet, all of the inorganic pigments are baked simultaneously by as single baking operation [0025-0026].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set taught by Hilgenfeld et al. as modified with the disclosure of Oishi et al. in order to provide an easy method of transferring ink to the base material.

As per claim 16: Hilgenfeld et al. as modified disclose the claimed invention except for the glass frit of the ink receptor layer containing about 2 to 10 percent by mass of Cadmium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the amount of Cadmium in the glass frit, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hilgenfeld et al. (US 6391388) and Tomioka et al. (US 20020062762), and further in view of Takabe et al. (JP 2002264594).

**Hilgenfeld et al. as modified discloses:**

The method of claim 4.

**Hilgenfeld et al. as modified does not disclose:**

If orange color is to be printed as part of the image on the base material, both yellow ink and red ink are discharged to form the orange color on the base material.

**Takabe et al. as modified disclose:**



If orange color is to be printed as part of the image on the base material, both yellow ink and red ink are discharged to form the orange color on the base material (solution).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Hilgenfeld et al. with the disclosure of Takabe et al. in order to provide less color cartridges needed in the printer and to provide vibrant colors.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilgenfeld et al. (US 6391388) and Tomioka et al. (US 20020062762), and further in view of Gandy et al. (US 5376957).

**Hilgenfeld et al. as modified discloses:**

The method of claim 13

**Hilgenfeld et al. as modified does not disclose:**

As per claim 14: if purple is to be printed as part of the image on the base material, both magenta ink and cyan ink are discharged to form the purple color on the base material.

As per claim 15: if purple is to be printed as part of the image on the base color, both magenta ink and cyan ink are discharged, then mixed on the base material, whereby a clear intermediate color can be represented on the base material.

**Gandy et al. as modified disclose:**

As per claim 14: if purple is to be printed as part of the image on the base material, both magenta ink and cyan ink are discharged to form the purple color on the base material (column 7, lines 3-14).

As per claim 15: if purple is to be printed as part of the image on the base color, both magenta ink and cyan ink are discharged, then mixed on the base material, whereby a clear intermediate color can be represented on the base material (column 7, lines 3-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Hilgenfeld et al. with the disclosure of Gandy et al. in order to provide less color cartridges needed in the printer and to provide vibrant colors.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

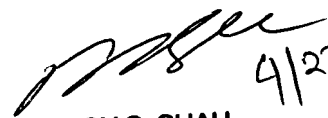
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
9/27/07  
**MANISH S. SHAH**  
**PRIMARY EXAMINER**